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ABSTRACT

This study was conducted to evaluate whether a brief self-description checklist may provide a viable method of quickly obtaining initial personality type information. The Personal Preferences Self-Description Questionnaire (PPSDQ) and the Myers-Briggs Type Indicator (MBTI) were administered to 420 college students, and PPCSQ item-response and MBTI scale-score data were analyzed using LISREL confirmatory factor analysis. Although one model (number 4) provided the best fit to the data, it is clear that a better fitting model must still be pursued. Additional items may be needed to measure the Judging-Perceiving dimension. Three tables present findings. An appendix presents six charts of fit statistics, and a second appendix lists word pairs. (Contains 19 references.) (SLD)

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MEASUREMENT INTEGRITY OF SCORES FROM A SELF-DESCRIPTION CHECKLIST
EVALUATING MYERS-BRIGGS TYPE INDICATOR (MBTI) TYPES:
A CONFIRMATORY FACTOR ANALYSIS

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ABSTRACT

The study was conducted to evaluate whether a brief self-description checklist may provide a viable method of quickly obtaining initial personality type information. The Personal Preferences Self-Description Questionnaire (PPDSQ) and the Myers-Briggs Type Indicator (MBTI) were administered to 420 college students, and PPDSQ item-response and MBTI scale-score data were analyzed using LISREL confirmatory factor analyses.

The Myers-Briggs Type Indicator (MBTI) is one of the most frequently used measures of personality (cf. Thompson & Ackerman, 1994), for at least two reasons. First, unlike many personality measures, the MBTI focuses on normal variations in personality, and because more people have normal as against abnormal personality, the measure may be useful with more people than measures of psychopathology would be. Second, many counselors find that the MBTI has enormous "face validity" for clients, i.e., that clients understand the concepts implicit in the measure, tend to agree with important aspects of type characterizations, and find the information to be useful, free of value judgments, and non-threatening.

McCaulley (1990) provides a concise and informed overview of the MBTI, its history, and its uses. The forms of the MBTI were developed over at least four decades. Initial work was done by Katherine C. Briggs and her daughter, Isabel Briggs Myers. Mary H. McCaulley also made numerous contributions, and worked closely with Isabel in projects such as the writing of the comprehensive MBTI manual (Myers & McCaulley, 1985), which was published subsequent to Myers' death in May, 1980.

The MBTI was developed with some grounding in the basic precepts of Carl G. Jung's theory of psychological functions and types. The theory presumes that "...much of the seemingly random variation in behavior is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use

their perception and judgment" (Myers & McCaulley, 1985, p. 1).

The MBTI is designed to measure four bipolar dimensions: Extraversion-Introversion, Sensation-intuition, Thinking-Feeling, and Judgment-Perception. In conventional usage, continuous scores are computed on each dimension for each preference pole of the dimension (e.g., both Extraversion and Introversion on the EI dimension), and persons are then "typed" based on which style within each dimension is preferred, i.e., has the highest continuous score. Each individual is then classified into one of the 16 types formed from all possible combinations of the four scales, e.g., ENTJ, ISTP, and ENFP.

Unlike the other three dimensions, the JP construct is *implicit* (rather than explicit) within Jung's theory. Theoretically, people do have a general rank-order preference for the four mental processes or functions of Sensing, intuition, Thinking, and Feeling. Myers reasoned that JP scores--when taken together with EI scores--would point to a person's dominant (most preferred), auxiliary, tertiary, and inferior (least preferred) functions (see McCaulley, 1990; Myers & McCaulley, 1985).

Persons with a preference for Judging most show the world in their public persona or public face either Thinking or Feeling, depending upon their preferences within the TF scale. Persons with a preference for Perceiving have either Sensing or intuition as the main function in their public persona, depending upon their preferences within the SN scale. Persons with a preference for Extraversion show the world their dominant function as part of

their public persona, while persons with a preference for Introversion show the world their second-most preferred function, i.e., their auxiliary. Thus, INTJ's for example show the world most often a preference for Thinking, but actually their most-preferred function--their dominant--is intuition. ENTJ's, on the other hand, most show the world Thinking, and Thinking is actually the dominant for the extraverted ENTJ's.

MBTI items are forced-choice in nature and consist of paired statements, one from either preference pole on one of the four scales. The MBTI was designed for use with older adolescents and adults in the normal population. Most forms of the measure have roughly 100 scored items. Previous factor analytic investigations of MBTI data have generally been supportive of a conclusion that the instrument yields scores measuring the intended constructs (e.g., Thompson & Borrello, 1986).

A pair of studies reported in the Manual (Myers & McCaulley, 1985) by Carskadon used *self-estimate* of type as a validity measure. When subjects were asked to choose the type description that best suited them, their actual MBTI-tested type was chosen to a statistically significant degree more often than other types.

These studies prompted us to explore the utility of a short-form measure of type preferences developed by Thompson (1994a); this measure is an *self-description* checklist consisting primarily of adjective pairs--the Personal Preferences Self-Description Questionnaire (PPDSQ). The MBTI itself includes several items involving adjectival self-description and this, taken with the

previous research involving self-estimation of type, together suggest that self-description may provide a sufficient basis with which to tentatively identify type.

The purpose of our present study was to explore the reliability of PPSDQ scores, the concurrent validity of PPSDQ scores in relation to MBTI continuous scores, and the construct validity of PPSDQ scores. The study was conducted as a second step in an iterative sequence of PPSDQ test revision and empirical investigation, building on previous work. Thompson and Stone (1994) reported analyses investigating scores on the original measure (Thompson, 1994a). Thompson added additional items to the original measure he developed, and scoring keys were also modified--Melancon and Thompson (1994) and the present study explored these stage-two revisions.

Method

Subjects

We administered MBTI Form G and the PPDSQ self-descriptive adjectival checklist to 420 college students enrolled in a private university located in the southern United States in an urban setting. There were more females ($n_1=273$; 65.0%) than males ($n_2=147$; 35.0%) in our sample. The mean age of the sample was 23.82 ($SD=9.58$).

Instrumentation

The PPDSQ (Thompson, 1994a) consists of word-pairs posited to mark each of the four dimensions of personality measured by the MBTI. Roughly half the PPSDQ items measuring each of the four

constructs were reversed so as to minimize response set. For example, item 1 ("Quiet-Expressive") measures EI, but the Introversion adjective ("Quiet") is presented first within the pair. Item 6 ("Social-Private") also measures EI, but the Extraversion adjective ("Social") is presented first within this adjective pair.

Each word pair is presented as a semantic differential scale. A Likert scale ("1" to "7") is presented between each pair of words, and subjects circle the number that represents which word best describes them. Thus, unlike the MBTI which uses an "ipsative" or forced-choice response format, the PPDSQ uses a "normative" or non-forced-choice response format.

Results

Confirmatory factor analyses were conducted using LISREL covariance structure analyses (Jöreskog & Sörbom, 1989). Bivariate correlation matrices were used as the basis for each analysis, to produce "scale-free" parameters. We could use correlation matrices, because all our models involved variables correlating with only one factor, and each factor had factor variance fixed to one (Cudeck, 1989).

Models/Analyses

Each model freed (a) one factor parameter per variable, (b) the factor correlation coefficients, and (c) the measurement error variances for each variable. All other parameters were fixed. Some analyses were conducted with subsamples ($n_1=232$; $n_2=188$) of the data, created by randomly splitting the sample ($n=420$) into

slightly disproportionate groups. These subsamples were created to explore generalizability of results (Thompson, 1994b, in press).

Model #1; Analysis #1 ($y=73+8=81$; $n_1=232$). This model posited four correlated factors defined by 81 variables--73 PPSDQ word-pairs and the eight continuous scores from the MBTI. The analysis was conducted using the first subsample of 232 subjects.

Model #2; Analysis #2a ($y=59+8=67$; $n_1=232$). This model posited four correlated factors defined by 67 variables--a subset of 59 PPSDQ word-pairs and the eight continuous scores from the MBTI. The 59 PPSDQ items were selected based on previous results (Melancon & Thompson, 1994; Thompson & Stone, 1994) and the analysis reported in Table 1. The analysis was conducted using the first subsample of 232 subjects.

INSERT TABLE 1 ABOUT HERE.

Model #2; Analysis #2b ($y=59+8=67$; $n_2=188$). This model was identical to the model tested in analysis 2a. However, the analysis was conducted using the second subsample of 188 subjects.

Model #2; Analysis #2c ($y=59+8=67$; $n_2=188$). This model was identical to the model tested in analysis 2a. The analysis was conducted using the second subsample of 188 subjects. To explore the generalizability of the factor parameters, the factor lambda coefficients from Analysis #2a for the subsample of 232 subjects were fit to the data for the second subsample of 188 subjects. Thus, this analysis was more parsimonious and had an additional 67 degrees of freedom.

Model #2; Analysis #2d ($\chi^2=59+8=67$; $n=420$). This model was identical to the model tested in analysis 2a. However, the analysis was conducted using the entire sample of 420 subjects.

Model #3; Analysis #3 ($\chi^2=59$; $n=420$). This model excluded the continuous scale scores from the MBTI, and employed only the subset of 59 PPSDQ item responses. The analysis was conducted using the entire sample of 420 subjects. Given results in previous studies (Melancon & Thompson, 1994; Thompson & Stone, 1994), this model presumed only three correlated factors, including a single factor which involved a combination of both the SN and the JP items.

Model #4; Analysis #4 ($\chi^2=59$; $n=420$). This model excluded the continuous scale scores from the MBTI, and employed only the subset of 59 PPSDQ item responses. The analysis was conducted using the entire sample of 420 subjects. This model presumed the same basic four correlated factors presumed in all models except Model #3, but fewer variables.

Fit Statistics

Table 2 presents fit statistics for a null model positing no factors, and each of the models tested. Table 3 presents the parameter estimates associated with Model #4, Analysis #4. The parameter estimates for the other analyses are appended.

INSERT TABLES 2 AND 3 ABOUT HERE.

The *a priori* model, Model #4 ($n=420$; $\chi^2=59$), positing the existence of four correlated factors yielded a χ^2 of 3,925.12 ($df = 1,646$; noncentrality parameter = $3,925.12 - 1,646 = 2,279.12$;

2,279.12/1,646 = 1.38), as reported in Table 2. The LISREL goodness-of-fit index (GFI) was .73. The comparative baseline for the analysis was a null model positing 59 uncorrelated factors and no measurement error; this model yielded a χ^2 of 9,294.34 (df = 1711; noncentrality parameter = 9,294.34 - 1,711 = 7,583.34; 7,583.34/1,711 = 4.43).

Discussion

Three methodological premises are worth noting at the outset of the present discussion. First, in science we seek results that generalize across analytic methods, including selection of different factor analytic methods. As Gorsuch (1983, p. 201) noted, "Factors that will appear under a wide variety of conditions are obviously more desirable than factors that appear only under specialized conditions", e.g., only when certain samples or certain factor extraction or rotation methods are used. The present study reports factor analyses using methods different than those previously employed by Melancon and Thompson (1994).

Second, as is always the case, no one study taken alone should be overinterpreted. As Neale and Liebert (1986, p. 290) observed:

No one study, however shrewdly designed and carefully executed, can provide convincing support for a causal hypothesis or theoretical statement... Too many possible (if not plausible) confounds, limitations on generality, and alternative interpretations can be offered for any one observation. Moreover, each of the basic methods of

research (experimental, correlational, and case study) and techniques of comparison (within- or between-subjects) has intrinsic limitations. How, then, does social science theory advance through research? The answer is, by collecting a diverse body of evidence about any major theoretical proposition.

Third, our data and our results do not alone determine our factor structure. As Mulaik (1987, p. 301) emphasized, "It is we who create meanings for things in deciding how they are to be used. Thus we should see the folly of supposing that exploratory factor analysis will teach us what intelligence is, or what personality is." We can not avoid the existential responsibility for defining our constructs. Of course, as Huberty (1994, p. 265) explains, our data can be used to guide our decisions as to what constructs are, i.e., theory development and theory testing are "joint bootstrap operations" (Hendrick & Hendrick, 1986, p. 393).

One problem that can occur when confirmatory factor analytic methods are applied to item-level variables--especially a large number of such variables--must also be noted. Items have more error variance than scales or composite test scores. Furthermore, some of these errors are more likely to be correlated when there are many variables present.

However, researchers are usually reticent to free measurement errors to be correlated, since many researchers presume that measurement error generally is randomly distributed, and thus

errors should be uncorrelated. In such situations, researchers fix the off-diagonal elements of the large measurement error matrix--theta delta in LISREL. Doing so can lead to artifactually large χ^2 test statistics. This dynamic must be considered during interpretation.

Our view is that Model #4 provided the best fit to the data. Certainly one would not be entirely sanguine about the fit statistics reported in Table 2, however (Bentler, 1990, 1994). It is clear that a better fitting model must still be pursued. The results of the present study and of previous studies (Melancon & Thompson, 1994; Thompson & Stone, 1994) suggest that additional items are needed to measure the JP dimension. There are too few items measuring the dimension, and the item factor parameters are not as large in magnitude as might be desired.

We speculate that it may be necessary to use full sentences, rather than word pairs, to measure the constructs associated with Judging-Perceiving. This possibility will be explored in the next, third phase of research.

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Table 1
PPSDQ Item-Response and MBTI Scale-Score Correlation Coefficients
(n = 420)

	EXTRAVER	INTROVER	SENSING	INTUITIO	THINKING	FEELING	JUDGING	PERCEIVI
MIXERLON	-.6595	.6393	.0148	.0313	.0818	-.0509	.0541	-.0588
SOCPRIVA	-.6522	.6287	.0864	-.0508	.0880	-.0767	.1357	-.1292
INTREXTR	.6193	-.6068	-.1131	.0468	-.0552	.0437	-.1143	.1050
SILENGAB	.5770	-.5674	-.0160	-.0039	.0000	.0264	-.0488	.0736
PERSNSHY	-.5660	.5562	.0794	-.0358	.0333	.0322	.0764	-.0704
QUIETEXP	.5521	-.5596	-.2370	.1816	-.0238	-.0136	-.1149	.0980
GREGARTI	-.4616	.4605	.1589	-.1279	-.0642	.0816	.0837	-.0911
CONGRECL	-.4377	.4114	.1184	-.0692	.1783	-.1239	.0634	-.0545
FRIEDIST	-.4348	.3976	-.0307	.0355	.2208	-.1380	.0129	-.0213
SOLIAMIC	.4250	-.4129	-.0922	.0541	-.0888	.0594	-.0385	.0219
EXUBSERE	-.4041	.3646	.0874	-.1075	-.0600	.0228	.0889	-.1187
STILLANI	.3820	-.3450	-.3027	.2699	-.1327	.1264	-.1914	.2006
REFLECAC	.3362	-.3402	.0500	-.0681	.0813	-.0699	-.0424	.0357
APPROACH	-.2524	.2441	-.1109	.1186	.1949	-.1458	-.0646	.0654
TERSEWOR	.1680	-.1542	-.0591	.0801	-.1203	.1362	.0033	.0166
TRADCREA	.1257	-.1337	-.4672	.3936	-.0966	.0133	-.1980	.1886
PRECIMAG	.0928	-.0959	-.4540	.3970	-.2429	.2160	-.3537	.3531
INVENORG	-.1111	.1117	.4329	-.3951	.1303	-.1383	.5201	-.5192
PLANVISI	.1124	-.1306	-.4169	.3795	-.1820	.1511	-.3791	.3784
CONCLEXP	.1076	-.0815	-.3842	.3434	-.1055	.0698	-.2821	.2724
INSIGHTS	-.0838	.0707	.3707	-.3608	.1532	-.1422	.3643	-.3479
DIVERCON	-.2033	.1898	.3541	-.3089	.1323	-.0678	.3796	-.3752
REALINTU	.0276	-.0461	-.3512	.3388	-.2667	.2551	-.1686	.1701
DIVERPRE	-.1718	.1571	.3378	-.3100	.1781	-.1431	.4290	-.4187
CONCEPRE	.1241	-.0973	.3276	-.3564	.0444	-.0681	.1453	-.1562
DIRECTIN	.1137	-.1189	-.3255	.2753	-.1154	.0790	-.1894	.1881
PRACTHEO	-.0205	.0039	-.3160	.3356	-.0186	.0511	-.1731	.1999
VARIREPI	-.1449	.1028	.2726	-.2269	.0631	-.0135	.2562	-.2503
INQUICRI	-.1138	.0863	.1865	-.1951	.2777	-.2155	.2224	-.2167
FACTCOMP	.1411	-.0940	-.2201	.2099	-.5514	.5161	-.1407	.1306
TENDERRA	-.0646	.0367	.1180	-.1335	.4834	-.4946	.0982	-.1131
FEELTHIN	-.2012	.1577	.0586	-.0792	.4775	-.4924	.0886	-.0997
KINDANAL	-.1400	.1141	-.0573	.0163	.4538	-.4156	.0417	-.0297
STRICTFO	.1005	-.0586	-.1866	.1866	-.4493	.3442	-.1620	.1557
DISPASEM	.1855	-.1700	-.1506	.1182	-.4254	.4000	.0525	-.0510
SKEPTRUS	.1288	-.1081	-.0835	.0862	-.4196	.3356	-.0939	.0914
EMPATHLO	.0145	-.0401	.1305	-.1716	.4073	-.4001	.1290	-.1272
LOGICHUM	.0306	-.0387	-.2099	.1781	-.4018	.3754	-.1750	.1459
LIGHTHEA	-.1753	.1705	.1746	-.1645	.3661	-.3125	.2450	-.2487
GULLSUSP	-.0505	.0250	.0598	-.1004	.3560	-.3414	.0507	-.0459
CARICOOL	-.0997	.0753	.0762	-.0494	.3524	-.2818	-.0413	.0557
ACCEPDIS	-.1788	.1587	.0806	-.0756	.3343	-.2877	.1129	-.0822
RECEPTSE	-.1750	.1380	.2150	-.1856	.3169	-.2663	.1358	-.1159
EVALNONJ	-.0034	.0228	-.2094	.1925	-.3100	.2391	-.1641	.1581
SYMPATHY	.0187	-.0364	.0076	-.0350	.2828	-.3305	.0514	-.0700
JUSTHARM	.0057	.0031	-.1438	.1671	-.2580	.2041	-.1224	.1072
EVALOPEN	.2210	-.2239	-.1536	.1214	-.2417	.1815	-.1719	.1607
PRINCIPL	.1932	-.1708	-.0508	.0589	-.2250	.1723	-.0979	.1001
IMPERPER	.1757	-.1652	-.0633	.0450	-.1989	.1773	.0411	-.0394
SENSUALI	-.1520	.1322	.0501	-.0431	.1436	-.1276	.1014	-.1043
FLEXORGA	-.0646	.0944	.2684	-.2543	.0718	-.0437	.5489	-.5393
PROMPTFR	.1934	-.1863	-.3323	.3133	-.1535	.1355	-.5265	.5144
RANDSEQU	-.1002	.0947	.2921	-.3054	.1392	-.1342	.4883	-.4864
TIMELYRE	.0851	-.0764	-.2632	.2746	-.1785	.1565	-.4825	.4691
IMPETTAS	-.0754	.0670	.2868	-.3091	.1334	-.1776	.4149	-.4229
CAREFREE	-.1443	.1088	.2202	-.2145	.3181	-.2364	.3700	-.3591
IMPULDEL	-.1341	.1288	.1560	-.1693	.1256	-.1418	.3627	-.3719

RESPADAP	-.0299	.0205	-.2250	.2285	-.0386	.0523	-.3323	.3359
DECICURI	.0032	.0236	-.1921	.2206	-.1780	.1854	-.1921	.2020
GLOBMETI	-.1852	.1988	.2602	-.2429	.1198	-.0860	.3058	-.2776
JUDGPERC	.0468	-.0615	-.2536	.2174	-.2348	.1632	-.0959	.0844
PICKYINQ	.0895	-.0839	-.2515	.2261	-.1625	.0476	-.1826	.1487
APPRASAV	-.0641	.0748	-.1789	.1962	-.0626	.0428	-.1156	.1103
NAIVEUNB	-.0303	.0051	.0192	-.0554	.2504	-.2344	-.0021	.0039
HEARRULE	.1241	-.1445	.1251	-.1068	.2347	-.1574	.0776	-.0410
RECEIVDE	-.0655	.0094	.0119	-.0302	.2085	-.2017	.1036	-.1070
ARBITLIS	-.1055	.1300	-.0510	.0512	-.1997	.1939	-.1208	.0931
SUBJOBJE	.0956	-.1061	.1020	-.1159	.1311	-.1106	.0096	-.0117
ENJOYANT	-.1186	.0962	.0344	-.0370	.1374	-.0817	.0653	-.0614
BENEVIMP	-.0162	.0028	.0416	.0111	.0867	-.1071	-.0125	.0114
OBSERVAS	.1035	-.1301	.0582	-.0460	.1216	-.1303	.1276	-.1250
RATIINFO	.0062	.0057	-.1001	.0465	.0162	-.0584	.0922	-.0923
DEEPBROA	-.0153	.0052	.0712	-.0976	.0895	-.0964	.0030	-.0114

Note. Items added by the senior author in the second-stage of instrument refinement, following the results reported by Thompson and Stone (1994), are italicized.

Table 2
Null Model and Substantive Model Fit Statistics
From the Various Analyses

confirm2.wk1

Statistic	Analysis						
	1	2a	2b	2c*	2d	3	4
n	232	232	188	188	420	420	420
v	81	67	67	67	67	59	59
Null chi sq	11339.28	9459.90	8288.42	8288.42	14833.83	9294.34	9294.34
Null df	3240	2211	2211	2211	2211	1711	1711
Noncentrality	8099.28	7248.90	6077.42	6077.42	12622.83	7583.34	7583.34
Model chi sq	5674.10	4012.92	3716.59	3817.75	8327.54	4026.80	3925.12
Model df	3149	2134	2134	2201	2134	1649	1646
Noncentrality	2525.10	1878.92	1582.59	1616.75	6193.54	2377.80	2279.12
NC / df	0.80187	0.88047	0.74161	0.73455	2.90231	1.44196	1.38464
GFI	0.610	0.644	0.619	0.613	0.619	0.723	0.730
Pars Ratio	0.94821	0.93679	0.93679	0.96620	0.93679	0.93164	0.92994
GFI*Pars	0.57841	0.60329	0.57987	0.59228	0.57987	0.67357	0.67886
CFI	0.68823	0.74080	0.73960	0.73397	0.50934	0.68644	0.69946
Pars Ratio	0.97191	0.96517	0.96517	0.99548	0.96517	0.96376	0.96201
CFI*Pars	0.66890	0.71500	0.71384	0.73065	0.49160	0.66157	0.67288

*This analysis (Analysis #2c) involved fitting the Model #2 factor parameters from the $n=232$ subsample data (Analysis #2a) to the data from the $n=188$ subsample. Thus, the degrees of freedom for Analysis #2c = $2134 + 67 = 2201$, because fewer parameters were freed in Analysis #2c.

Note. These fit statistics are described by Bentler (1990, 1994) and by Mulaik, James, van Alstine, Bennett, Lind, & Stilwell (1989).

Table 3
Fit Statistics for Model #4; Analysis #4 ($v=59$; $n=420$)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.783	0.000	0.000	0.000
SOCPRIVA	0.753	0.000	0.000	0.000
INTREXTR	-0.741	0.000	0.000	0.000
SILENGAB	-0.644	0.000	0.000	0.000
PERSNSHY	0.755	0.000	0.000	0.000
QUIETEXP	-0.679	0.000	0.000	0.000
GREGARTI	0.544	0.000	0.000	0.000
CONGRECL	0.593	0.000	0.000	0.000
FRIEDIST	0.568	0.000	0.000	0.000
SOLIAMIC	-0.583	0.000	0.000	0.000
EXUBSERE	0.452	0.000	0.000	0.000
STILLANI	-0.456	0.000	0.000	0.000
REFLECAC	-0.356	0.000	0.000	0.000
APPROACH	0.335	0.000	0.000	0.000
TERSEWOR	-0.185	0.000	0.000	0.000
TRADCREA	0.000	0.506	0.000	0.000
PRECIMAG	0.000	0.638	0.000	0.000
INVENORG	0.000	-0.668	0.000	0.000
PLANVISI	0.000	0.592	0.000	0.000
CONCLEXP	0.000	0.501	0.000	0.000
INSIGHTS	0.000	-0.587	0.000	0.000
DIVERCON	0.000	-0.620	0.000	0.000
REALINTU	0.000	0.350	0.000	0.000
DIVERPRE	0.000	-0.670	0.000	0.000
CONCEPRE	0.000	-0.213	0.000	0.000
DIRECTIN	0.000	0.425	0.000	0.000
PRACTHEO	0.000	0.188	0.000	0.000
VARIREPI	0.000	-0.480	0.000	0.000
INQUICRI	0.000	-0.429	0.000	0.000
FACTCOMP	0.000	0.000	0.713	0.000
TENDERRA	0.000	0.000	-0.583	0.000
FEELTHIN	0.000	0.000	-0.535	0.000
KINDANAL	0.000	0.000	-0.562	0.000
STRICTFO	0.000	0.000	0.554	0.000
DISPASEM	0.000	0.000	0.514	0.000
SKEPTRUS	0.000	0.000	0.487	0.000
EMPATHLO	0.000	0.000	-0.425	0.000
LOGICHUM	0.000	0.000	0.473	0.000
LIGHTHEA	0.000	0.000	-0.511	0.000
GULLSUSP	0.000	0.000	-0.362	0.000
CARICOOL	0.000	0.000	-0.437	0.000
ACCEPDIS	0.000	0.000	-0.477	0.000
RECEPTSE	0.000	0.000	-0.387	0.000
EVALNONJ	0.000	0.000	0.421	0.000
SYMPATHY	0.000	0.000	-0.228	0.000
JUSTHARM	0.000	0.000	0.315	0.000
EVALOPEN	0.000	0.000	0.369	0.000
PRINCIPL	0.000	0.000	0.381	0.000
IMPERPER	0.000	0.000	0.367	0.000
SENSUALI	0.000	0.000	-0.275	0.000

FLEXORGA	0.000	0.000	0.000	0.577
PROMPTFR	0.000	0.000	0.000	-0.661
RANDSEQU	0.000	0.000	0.000	0.634
TIMELYRE	0.000	0.000	0.000	-0.570
IMPETTAS	0.000	0.000	0.000	0.521
IMPULDEL	0.000	0.000	0.000	0.512
RESPADAP	0.000	0.000	0.000	-0.376
DECICURI	0.000	0.000	0.000	-0.334
CAREFREE	0.000	0.000	0.000	0.546

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
EXTRINTR	1.000			
SENSINTU	-0.333	1.000		
THINFEEL	-0.333	0.477	1.000	
JUDGPERC	0.234	-0.796	-0.428	1.000

Appendix A.1
Fit Statistics for Model #1; Analysis #1 ($y=73+8=81$; $n_1=232$)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.819	0.000	0.000	0.000
SOCPRIVA	0.797	0.000	0.000	0.000
INTREXTR	-0.737	0.000	0.000	0.000
SILENGAB	-0.638	0.000	0.000	0.000
PERSNSHY	0.757	0.000	0.000	0.000
QUIETEXP	-0.648	0.000	0.000	0.000
GREGARTI	0.545	0.000	0.000	0.000
CONGRECL	0.579	0.000	0.000	0.000
FRIEDIST	0.603	0.000	0.000	0.000
SOLIAMIC	-0.547	0.000	0.000	0.000
EXUBSERE	0.472	0.000	0.000	0.000
STILLANI	-0.451	0.000	0.000	0.000
REFLECAC	-0.367	0.000	0.000	0.000
APPROACH	0.415	0.000	0.000	0.000
TERSEWOR	-0.210	0.000	0.000	0.000
TRADCREA	0.000	0.540	0.000	0.000
PRECIMAG	0.000	0.678	0.000	0.000
INVENORG	0.000	-0.620	0.000	0.000
PLANVISI	0.000	0.549	0.000	0.000
CONCLEXP	0.000	0.515	0.000	0.000
INSIGHTS	0.000	-0.621	0.000	0.000
DIVERCON	0.000	-0.621	0.000	0.000
REALINTU	0.000	0.310	0.000	0.000
DIVERPRE	0.000	-0.671	0.000	0.000
CONCEPRE	0.000	-0.163	0.000	0.000
DIRECTIN	0.000	0.377	0.000	0.000
PRACTHEO	0.000	0.090	0.000	0.000
VARIREPI	0.000	-0.488	0.000	0.000
INQUICRI	0.000	-0.415	0.000	0.000
FACTCOMP	0.000	0.000	0.662	0.000
TENDERRA	0.000	0.000	-0.539	0.000
FEELTHIN	0.000	0.000	-0.572	0.000
KINDANAL	0.000	0.000	-0.557	0.000
STRICTFO	0.000	0.000	0.530	0.000
DISPASEM	0.000	0.000	0.537	0.000
SKEPTRUS	0.000	0.000	0.539	0.000
EMPATHLO	0.000	0.000	-0.483	0.000
LOGICHUM	0.000	0.000	0.436	0.000
LIGHTHEA	0.000	0.000	-0.428	0.000
GULLSUSP	0.000	0.000	-0.409	0.000
CARICOOL	0.000	0.000	-0.469	0.000
ACCEPDIS	0.000	0.000	-0.454	0.000
RECEPTSE	0.000	0.000	-0.386	0.000
EVALNONJ	0.000	0.000	0.384	0.000
SYMPATHY	0.000	0.000	-0.283	0.000
JUSTHARM	0.000	0.000	0.294	0.000
EVALOPEN	0.000	0.000	0.365	0.000
PRINCIPL	0.000	0.000	0.438	0.000
IMPERPER	0.000	0.000	0.388	0.000
SENSUALI	0.000	0.000	-0.223	0.000
FLEXORGA	0.000	0.000	0.000	0.625

PROMPTFR	0.000	0.000	0.000	-0.644
RANDSEQU	0.000	0.000	0.000	0.616
TIMELYRE	0.000	0.000	0.000	-0.605
IMPETTAS	0.000	0.000	0.000	0.567
IMPULDEL	0.000	0.000	0.000	0.444
RESPADAP	0.000	0.000	0.000	-0.366
DECICURI	0.000	0.000	0.000	-0.360
CAREFREE	0.000	0.000	0.000	0.475
GLOBMETI	0.000	0.000	0.000	0.422
JUDGPERC	0.000	0.358	0.000	0.000
PICKYINQ	0.000	0.287	0.000	0.000
APPRAVAV	0.000	0.000	0.000	-0.206
NAIVEUNB	0.000	0.000	-0.427	0.000
HEARRULE	0.000	0.000	-0.328	0.000
RECEIVDE	0.000	0.000	-0.262	0.000
ARBITLIS	0.000	0.000	0.281	0.000
SUBJOBGE	0.000	0.000	-0.172	0.000
ENJOYANT	0.000	0.000	-0.222	0.000
BENEVIMP	0.000	0.000	-0.114	0.000
OBSERVAS	0.000	0.000	-0.229	0.000
RATIINFO	0.000	0.000	0.039	0.000
DEEPBROA	0.000	0.000	-0.138	0.000
EXTRAVER	-0.810	0.000	0.000	0.000
INTROVER	0.781	0.000	0.000	0.000
SENSING	0.000	-0.647	0.000	0.000
INTUITIO	0.000	0.586	0.000	0.000
THINKING	0.000	0.000	-0.775	0.000
FEELING	0.000	0.000	0.704	0.000
JUDGING	0.000	0.000	0.000	0.778
PERCEIVI	0.000	0.000	0.000	-0.760

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
EXTRINTR	1.000			
SENSINTU	-0.319	1.000		
THINFEEL	-0.242	0.386	1.000	
JUDGPERC	0.188	-0.770	-0.310	1.000

Appendix A.2
Fit Statistics for Model #2; Analysis #2a ($v=59+8=67$; $n_1=232$)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.819	0.000	0.000	0.000
SOCPRIVA	0.797	0.000	0.000	0.000
INTREXTR	-0.736	0.000	0.000	0.000
SILENGAB	-0.638	0.000	0.000	0.000
PERSNSHY	0.757	0.000	0.000	0.000
QUIETEXP	-0.648	0.000	0.000	0.000
GREGARTI	0.545	0.000	0.000	0.000
CONGRECL	0.580	0.000	0.000	0.000
FRIEDIST	0.603	0.000	0.000	0.000
SOLIAMIC	-0.548	0.000	0.000	0.000
EXUBSERE	0.472	0.000	0.000	0.000
STILLANI	-0.451	0.000	0.000	0.000
REFLECAC	-0.367	0.000	0.000	0.000
APPROACH	0.416	0.000	0.000	0.000
TERSEWOR	-0.211	0.000	0.000	0.000
TRADCREA	0.000	0.547	0.000	0.000
PRECIMAG	0.000	0.686	0.000	0.000
INVENORG	0.000	-0.628	0.000	0.000
PLANVISI	0.000	0.544	0.000	0.000
CONCLEXP	0.000	0.518	0.000	0.000
INSIGHTS	0.000	-0.625	0.000	0.000
DIVERCON	0.000	-0.625	0.000	0.000
REALINTU	0.000	0.301	0.000	0.000
DIVERPRE	0.000	-0.672	0.000	0.000
CONCEPRE	0.000	-0.160	0.000	0.000
DIRECTIN	0.000	0.368	0.000	0.000
PRACTHEO	0.000	0.089	0.000	0.000
VARIREPI	0.000	-0.482	0.000	0.000
INQUICRI	0.000	-0.401	0.000	0.000
FACTCOMP	0.000	0.000	0.674	0.000
TENDERRA	0.000	0.000	-0.543	0.000
FEELTHIN	0.000	0.000	-0.582	0.000
KINDANAL	0.000	0.000	-0.549	0.000
STRICTFO	0.000	0.000	0.533	0.000
DISPASEM	0.000	0.000	0.540	0.000
SKEPTRUS	0.000	0.000	0.533	0.000
EMPATHLO	0.000	0.000	-0.472	0.000
LOGICHUM	0.000	0.000	0.436	0.000
LIGHTHEA	0.000	0.000	-0.427	0.000
GULLSUSP	0.000	0.000	-0.396	0.000
CARICOOL	0.000	0.000	-0.471	0.000
ACCEPDIS	0.000	0.000	-0.450	0.000
RECEPTSE	0.000	0.000	-0.375	0.000
EVALNONJ	0.000	0.000	0.374	0.000
SYMPATHY	0.000	0.000	-0.285	0.000
JUSTHARM	0.000	0.000	0.289	0.000
EVALOPEN	0.000	0.000	0.374	0.000
PRINCIPL	0.000	0.000	0.433	0.000
IMPERPER	0.000	0.000	0.394	0.000
SENSUALI	0.000	0.000	-0.222	0.000

FLEXORGA	0.000	0.000	0.000	0.620
PROMPTFR	0.000	0.000	0.000	-0.645
RANDSEQU	0.000	0.000	0.000	0.621
TIMELYRE	0.000	0.000	0.000	-0.608
IMPETTAS	0.000	0.000	0.000	0.560
IMPULDEL	0.000	0.000	0.000	0.446
RESPADAP	0.000	0.000	0.000	-0.369
DECICURI	0.000	0.000	0.000	-0.351
CAREFREE	0.000	0.000	0.000	0.465
EXTRAVER	-0.810	0.000	0.000	0.000
INTROVER	0.781	0.000	0.000	0.000
SENSING	0.000	-0.644	0.000	0.000
INTUITIO	0.000	0.582	0.000	0.000
THINKING	0.000	0.000	-0.777	0.000
FEELING	0.000	0.000	0.711	0.000
JUDGING	0.000	0.000	0.000	0.794
PERCEIVI	0.000	0.000	0.000	-0.777

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
EXTRINTR	1.000			
SENSINTU	-0.315	1.000		
THINFEEL	-0.257	0.367	1.000	
JUDGPERC	0.173	-0.762	-0.280	1.000

Appendix A.3
Fit Statistics for Model #2; Analysis #2b ($v=59+8=67$; $n_2=188$)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.746	0.000	0.000	0.000
SOCPRIVA	0.722	0.000	0.000	0.000
INTREXTR	-0.759	0.000	0.000	0.000
SILENGAB	-0.678	0.000	0.000	0.000
PERSNSHY	0.718	0.000	0.000	0.000
QUIETEXP	-0.722	0.000	0.000	0.000
GREGARTI	0.546	0.000	0.000	0.000
CONGRECL	0.584	0.000	0.000	0.000
FRIEDIST	0.506	0.000	0.000	0.000
SOLIAMIC	-0.597	0.000	0.000	0.000
EXUBSERE	0.441	0.000	0.000	0.000
STILLANI	-0.458	0.000	0.000	0.000
REFLECAC	-0.372	0.000	0.000	0.000
APPROACH	0.225	0.000	0.000	0.000
TERSEWOR	-0.155	0.000	0.000	0.000
TRADCREA	0.000	0.487	0.000	0.000
PRECIMAG	0.000	0.602	0.000	0.000
INVENORG	0.000	-0.735	0.000	0.000
PLANVISI	0.000	0.653	0.000	0.000
CONCLEXP	0.000	0.501	0.000	0.000
INSIGHTS	0.000	-0.545	0.000	0.000
DIVERCON	0.000	-0.579	0.000	0.000
REALINTU	0.000	0.460	0.000	0.000
DIVERPRE	0.000	-0.638	0.000	0.000
CONCEPRE	0.000	-0.368	0.000	0.000
DIRECTIN	0.000	0.492	0.000	0.000
PRACTHEO	0.000	0.402	0.000	0.000
VARIREPI	0.000	-0.435	0.000	0.000
INQUICRI	0.000	-0.414	0.000	0.000
FACTCOMP	0.000	0.000	0.757	0.000
TENDERRA	0.000	0.000	-0.647	0.000
FEELTHIN	0.000	0.000	-0.519	0.000
KINDANAL	0.000	0.000	-0.580	0.000
STRICTFO	0.000	0.000	0.570	0.000
DISPASEM	0.000	0.000	0.500	0.000
SKEPTRUS	0.000	0.000	0.452	0.000
EMPATHLO	0.000	0.000	-0.430	0.000
LOGICHUM	0.000	0.000	0.545	0.000
LIGHTHEA	0.000	0.000	-0.568	0.000
GULLSUSP	0.000	0.000	-0.379	0.000
CARICOOL	0.000	0.000	-0.405	0.000
ACCEPDIS	0.000	0.000	-0.469	0.000
RECEPTSE	0.000	0.000	-0.397	0.000
EVALNONJ	0.000	0.000	0.451	0.000
SYMPATHY	0.000	0.000	-0.241	0.000
JUSTHARM	0.000	0.000	0.356	0.000
EVALOPEN	0.000	0.000	0.322	0.000
PRINCIPL	0.000	0.000	0.264	0.000
IMPERPER	0.000	0.000	0.278	0.000
SENSUALI	0.000	0.000	-0.285	0.000
FLEXORGA	0.000	0.000	0.000	0.598

PROMPTFR	0.000	0.000	0.000	-0.685
RANDSEQU	0.000	0.000	0.000	0.650
TIMELYRE	0.000	0.000	0.000	-0.547
IMPETTAS	0.000	0.000	0.000	0.494
IMPULDEL	0.000	0.000	0.000	0.550
RESPADAP	0.000	0.000	0.000	-0.428
DECICURI	0.000	0.000	0.000	-0.258
CAREFREE	0.000	0.000	0.000	0.586
EXTRAVER	-0.834	0.000	0.000	0.000
INTROVER	0.814	0.000	0.000	0.000
SENSING	0.000	-0.679	0.000	0.000
INTUITIO	0.000	0.645	0.000	0.000
THINKING	0.000	0.000	-0.808	0.000
FEELING	0.000	0.000	0.722	0.000
JUDGING	0.000	0.000	0.000	0.786
PERCEIVI	0.000	0.000	0.000	-0.787

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPCR
EXTRINTR	1.000			
SENSINTU	-0.253	1.000		
THINFEEL	-0.299	0.510	1.000	
JUDGPCR	0.250	-0.807	-0.459	1.000

Appendix A.4

Fit Statistics for Model #2; Analysis #2c ($\chi^2=59+8=67$; $n_2=188$)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.819	0.000	0.000	0.000
SOCPRIVA	0.797	0.000	0.000	0.000
INTREXTR	-0.736	0.000	0.000	0.000
SILENGAB	-0.638	0.000	0.000	0.000
PERSNSHY	0.757	0.000	0.000	0.000
QUIETEXP	-0.648	0.000	0.000	0.000
GREGARTI	0.545	0.000	0.000	0.000
CONGRECL	0.580	0.000	0.000	0.000
FRIEDIST	0.603	0.000	0.000	0.000
SOLIAMIC	-0.548	0.000	0.000	0.000
EXUBSERE	0.472	0.000	0.000	0.000
STILLANI	-0.451	0.000	0.000	0.000
REFLECAC	-0.367	0.000	0.000	0.000
APPROACH	0.416	0.000	0.000	0.000
TERSEWOR	-0.211	0.000	0.000	0.000
TRADCREA	0.000	0.547	0.000	0.000
PRECIMAG	0.000	0.686	0.000	0.000
INVENORG	0.000	-0.628	0.000	0.000
PLANVISI	0.000	0.544	0.000	0.000
CONCLEXP	0.000	0.518	0.000	0.000
INSIGHTS	0.000	-0.625	0.000	0.000
DIVERCON	0.000	-0.625	0.000	0.000
REALINTU	0.000	0.301	0.000	0.000
DIVERPRE	0.000	-0.672	0.000	0.000
CONCEPRE	0.000	-0.160	0.000	0.000
DIRECTIN	0.000	0.368	0.000	0.000
PRACTHEO	0.000	0.089	0.000	0.000
VARIREPI	0.000	-0.482	0.000	0.000
INQUICRI	0.000	-0.401	0.000	0.000
FACTCOMP	0.000	0.000	0.674	0.000
TENDERRA	0.000	0.000	-0.543	0.000
FEELTHIN	0.000	0.000	-0.582	0.000
KINDANAL	0.000	0.000	-0.549	0.000
STRICTFO	0.000	0.000	0.533	0.000
DISPASEM	0.000	0.000	0.540	0.000
SKEPTRUS	0.000	0.000	0.533	0.000
EMPATHLO	0.000	0.000	-0.472	0.000
LOGICHUM	0.000	0.000	0.436	0.000
LIGHTHEA	0.000	0.000	-0.427	0.000
GULLSUSP	0.000	0.000	-0.396	0.000
CARICOOL	0.000	0.000	-0.471	0.000
ACCEPDIS	0.000	0.000	-0.450	0.000
RECEPTSE	0.000	0.000	-0.375	0.000
EVALNONJ	0.000	0.000	0.374	0.000
SYMPATHY	0.000	0.000	-0.285	0.000
JUSTHARM	0.000	0.000	0.289	0.000
EVALOPEN	0.000	0.000	0.374	0.000
PRINCIPL	0.000	0.000	0.433	0.000
IMPERPER	0.000	0.000	0.394	0.000
SENSUALI	0.000	0.000	-0.222	0.000
FLEXORGA	0.000	0.000	0.000	0.620

PROMPTFR	0.000	0.000	0.000	-0.645
RANDSEQU	0.000	0.000	0.000	0.621
TIMELYRE	0.000	0.000	0.000	-0.608
IMPETTAS	0.000	0.000	0.000	0.560
IMPULDEL	0.000	0.000	0.000	0.446
RESPADAP	0.000	0.000	0.000	-0.369
DECICURI	0.000	0.000	0.000	-0.351
CAREFREE	0.000	0.000	0.000	0.465
EXTRAVER	-0.810	0.000	0.000	0.000
INTROVER	0.781	0.000	0.000	0.000
SENSING	0.000	-0.644	0.000	0.000
INTUITIO	0.000	0.582	0.000	0.000
THINKING	0.000	0.000	-0.777	0.000
FEELING	0.000	0.000	0.711	0.000
JUDGING	0.000	0.000	0.000	0.794
PERCEIVI	0.000	0.000	0.000	-0.777

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
EXTRINTR	1.000			
SENSINTU	-0.271	1.000		
THINFEEL	-0.314	0.499	1.000	
JUDGPERC	0.237	-0.795	-0.421	1.000

Appendix A.5
Fit Statistics for Model #2; Analysis #2d (v=59+8=67; n=420)

LAMBDA X	EXTRINTR	SENSINTU	THINFEEL	JUDGPERC
MIXERLON	0.746	0.000	0.000	0.000
SOCPRIVA	0.722	0.000	0.000	0.000
INTREXTR	-0.759	0.000	0.000	0.000
SILENGAB	-0.678	0.000	0.000	0.000
PERSNSHY	0.718	0.000	0.000	0.000
QUIETEXP	-0.722	0.000	0.000	0.000
GREGARTI	0.546	0.000	0.000	0.000
CONGRECL	0.584	0.000	0.000	0.000
FRIEDIST	0.506	0.000	0.000	0.000
SOLIAMIC	-0.597	0.000	0.000	0.000
EXUBSERE	0.441	0.000	0.000	0.000
STILLANI	-0.458	0.000	0.000	0.000
REFLECAC	-0.372	0.000	0.000	0.000
APPROACH	0.225	0.000	0.000	0.000
TERSEWOR	-0.155	0.000	0.000	0.000
TRADCREA	0.000	0.487	0.000	0.000
PRECIMAG	0.000	0.602	0.000	0.000
INVENORG	0.000	-0.735	0.000	0.000
PLANVISI	0.000	0.653	0.000	0.000
CONCLEXP	0.000	0.501	0.000	0.000
INSIGHTS	0.000	-0.545	0.000	0.000
DIVERCON	0.000	-0.579	0.000	0.000
REALINTU	0.000	0.460	0.000	0.000
DIVERPRE	0.000	-0.638	0.000	0.000
CONCEPRE	0.000	-0.368	0.000	0.000
DIRECTIN	0.000	0.492	0.000	0.000
PRACTHEO	0.000	0.402	0.000	0.000
VARIREPI	0.000	-0.435	0.000	0.000
INQUICRI	0.000	-0.414	0.000	0.000
FACTCOMP	0.000	0.000	0.757	0.000
TENDERRA	0.000	0.000	-0.647	0.000
FEELTHIN	0.000	0.000	-0.519	0.000
KINDANAL	0.000	0.000	-0.580	0.000
STRICTFO	0.000	0.000	0.570	0.000
DISPASEM	0.000	0.000	0.500	0.000
SKEPTRUS	0.000	0.000	0.452	0.000
EMPATHLO	0.000	0.000	-0.430	0.000
LOGICHUM	0.000	0.000	0.545	0.000
LIGHTHEA	0.000	0.000	-0.568	0.000
GULLSUSP	0.000	0.000	-0.379	0.000
CARICOOL	0.000	0.000	-0.405	0.000
ACCEPDIS	0.000	0.000	-0.469	0.000
RECEPTSE	0.000	0.000	-0.397	0.000
EVALNONJ	0.000	0.000	0.451	0.000
SYMPATHY	0.000	0.000	-0.241	0.000
JUSTHARM	0.000	0.000	0.356	0.000
EVALOPEN	0.000	0.000	0.322	0.000
PRINCIPL	0.000	0.000	0.264	0.000
IMPERPER	0.000	0.000	0.278	0.000
SENSUALI	0.000	0.000	-0.285	0.000
FLEXORGA	0.000	0.000	0.000	0.598

PROMPTFR	0.000	0.000	0.000	-0.685
RANDSEQU	0.000	0.000	0.000	0.650
TIMELYRE	0.000	0.000	0.000	-0.547
IMPETTAS	0.000	0.000	0.000	0.494
IMPULDEL	0.000	0.000	0.000	0.550
RESPADAP	0.000	0.000	0.000	-0.428
DECICURI	0.000	0.000	0.000	-0.258
CAREFREE	0.000	0.000	0.000	0.586
EXTRAVER	-0.834	0.000	0.000	0.000
INTROVER	0.814	0.000	0.000	0.000
SENSING	0.000	-0.679	0.000	0.000
INTUITIO	0.000	0.645	0.000	0.000
THINKING	0.000	0.000	-0.808	0.000
FEELING	0.000	0.000	0.722	0.000
JUDGING	0.000	0.000	0.000	0.786
PERCEIVI	0.000	0.000	0.000	-0.787

PHI

	EXTRINTR	SENSINTU	THINFEEL	JUDGPCRC
EXTRINTR	1.000			
SENSINTU	-0.253	1.000		
THINFEEL	-0.299	0.510	1.000	
JUDGPCRC	0.250	-0.807	-0.459	1.000

Appendix A.6
Fit Statistics for Model #3; Analysis #3 ($y=59$; $n=420$)

LAMBDA X	EXTRINTR	SEINJUPE	THINFEEL
MIXERLON	0.783	0.000	0.000
SOCPRIVA	0.755	0.000	0.000
INTREXTR	-0.741	0.000	0.000
SILENGAB	-0.644	0.000	0.000
PERSNSHY	0.754	0.000	0.000
QUIETEXP	-0.678	0.000	0.000
GREGARTI	0.543	0.000	0.000
CONGRECL	0.592	0.000	0.000
FRIEDIST	0.568	0.000	0.000
SOLIAMIC	-0.582	0.000	0.000
EXUBSERE	0.450	0.000	0.000
STILLANI	-0.454	0.000	0.000
REFLECAC	-0.358	0.000	0.000
APPROACH	0.334	0.000	0.000
TERSEWOR	-0.185	0.000	0.000
TRADCREA	0.000	0.465	0.000
PRECIMAG	0.000	0.613	0.000
INVENORG	0.000	-0.680	0.000
PLANVISI	0.000	0.583	0.000
CONCLEXP	0.000	0.498	0.000
INSIGHTS	0.000	-0.568	0.000
DIVERCON	0.000	-0.600	0.000
REALINTU	0.000	0.336	0.000
DIVERPRE	0.000	-0.636	0.000
CONCEPRE	0.000	-0.211	0.000
DIRECTIN	0.000	0.407	0.000
PRACTHEO	0.000	0.194	0.000
VARIREPI	0.000	-0.457	0.000
INQUICRI	0.000	-0.412	0.000
FACTCOMP	0.000	0.000	0.713
TENDERRA	0.000	0.000	-0.583
FEELTHIN	0.000	0.000	-0.535
KINDANAL	0.000	0.000	-0.562
STRICTFO	0.000	0.000	0.554
DISPASEM	0.000	0.000	0.514
SKEPTRUS	0.000	0.000	0.487
EMPATHLO	0.000	0.000	-0.425
LOGICHUM	0.000	0.000	0.473
LIGHTHEA	0.000	0.000	-0.510
GULLSUSP	0.000	0.000	-0.362
CARICOOL	0.000	0.000	-0.437
ACCEPDIS	0.000	0.000	-0.477
RECEPTSE	0.000	0.000	-0.387
EVALNONJ	0.000	0.000	0.421
SYMPATHY	0.000	0.000	-0.228
JUSTHARM	0.000	0.000	0.314
EVALOPEN	0.000	0.000	0.369
PRINCIPL	0.000	0.000	0.381
IMPERPER	0.000	0.000	0.367
SENSUALI	0.000	0.000	-0.275
FLEXORGA	0.000	-0.555	0.000

PROMPTFR	0.000	0.608	0.000
RANDSEQU	0.000	-0.573	0.000
TIMELYRE	0.000	0.486	0.000
IMPETTAS	0.000	-0.474	0.000
IMPULDEL	0.000	-0.472	0.000
RESPADAP	0.000	0.318	0.000
DECICURI	0.000	0.317	0.000
CAREFREE	0.000	-0.505	0.000

PHI

	EXTRINTR	SEINJUPE	THINFEEL
EXTRINTR	1.000		
SEINJUPE	-0.308	1.000	
THINFEEL	-0.333	0.481	1.000

Appendix B
Word Pairs

E		I		S		N		T		F		J		P	
123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567	123456701234567
Active	11 Reflective	12 Precise		Imaginative		Objective	14 Subjective	Organized	10 Flexible						
6 Social	Private	Sequential	17 Random	19 Justice	Harmony	15 Decisive	Curious								
Expressive	1 Quiet	22 Enjoyment	Anticipation	Cool	24 Caring	Deliberate	20 Impulsive								
16 Friendly	Distant	Repetition	27 Variety	29 Impersonal	Personal	25 Evaluative	Open								
Broad	21 Deep	2 Realistic	Intuitive	Logic	4 Empathy	Selective	30 Receptive								
26 Personable	Shy	32 Sensual	Innovative	Fairness	34 Sympathy	5 Responsible	Adaptable								
Wordy	31 Terse	Meticulous	37 Global	9 Dispassionate	Emotional	35 Judging	Perceiving								
36 Approachable	Mysterious	42 Traditional	Creative	39 Principles	People	Demanding	40 Carefree								
Extrovert	41 Introvert	Systematic	7 Insightful	Analytical	44 Kind	45 Evaluative	Nonjudgmental								
46 Mixer	Loner	Organized	47 Inventive	48 Factual	Compassionate	Critical	49 Inquisitive								
Animated	50 Still	51 Directed	Ingenious	Thinking	52 Feeling	53 Prompt	Free-spirited								
54 Congenial	Reclusive	Consistency	55 Diversity	56 Logical	Humane	Task-oriented	57 Impetuous								
Amicable	58 Solitary	59 Playful	Visionary	Rational	60 Tender	61 Timely	Relaxed								
62 Exuberant	Serene	Precise	63 Diverse	64 Skeptical	Trusting	Discriminating	65 Accepting								
Gabby	66 Silent	67 Practical	Theoretical	Impartial	68 Benevolent	69 Picky	Inquiring								
70 Gregarious	Timid	Real	71 Conceptual	72 Strict	Forgiving	Prudent	73 Lighthearted								
						Unbelieving	3 Naive								
						8 Arbitrate	Listen								
						Rule	13 Hear								
						18 Conclude	Explore								
						Decide	23 Receive								
						28 Appraise	Savor								
						Assess	33 Observe								
						38 Ratings	Information								
						Suspicious	43 Gullible								